



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/575,434

04/10/2006

Stefan Kunz

06-226

1858

34704 7590 10/15/2007
BACHMAN & LAPOINTE, P.C.
900 CHAPEL STREET
SUITE 1201
NEW HAVEN, CT 06510

EXAMINER

MACAULEY, SHERIDAN R

ART UNIT

PAPER NUMBER

1651

MAIL DATE

DELIVERY MODE

10/15/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,434	Applicant(s) KUNZ, STEFAN	
	Examiner Sheridan R. MacAuley	Art Unit 1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 8, 12, 13, 15-17, 20 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> . |

Continuation of Attachment(s) 6). Other: Machine Translation of Seibold et al. (in Abstracts of Presentations given at Phytobakteriologie Conference).

DETAILED ACTION

Claims 1-22 are pending and examined on the merits in this office action.

Claim Objections

1. Claims 4, 5, 8, 12, 13, 15-17, 20 and 22 are objected to because of the following informalities. It is recommended that the claims be amended as follows: The word "*Aureobasisium*" should be changed to "*Aureobasidium*". In claim 5, the word "in" should be added between the words "claimed" and "claim". In claim 8, a comma should be added between the terms "yeast cells" and "(2)". In claim 16, the word "comprise" should be changed to the word "comprising" and the word "comprising," or some other appropriate term, should be added between the terms "acidic environment" and "fungal structures". In claim 22, the word "has," or some other appropriate term, should be added between the terms "product" and "a pH range". Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-13 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1651

4. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation "plant diseases", and the claim also recites "fire blight" which is the narrower statement of the range/limitation. Also, claim 2 recites the broad recitation "pH range of from 3 to 6", and the claim also recites "pH 3.6 to 4.0," which is the narrower statement of the range/limitation. Claim 15 recites the broad recitation "approx. 2×10^{11} to 1×10^{13} ", and the claim also recites " 2×10^{12} ," which is the narrower statement of the range/limitation; claim 15 recites four other broad limitations together with a narrow limitation.

5. Claims 1-13 are rejected insofar as they depend from claim 1.

Art Unit: 1651

6. In claim 3, it is also unclear whether applicant intends for the term "which are capable of multiplication" to apply to the yeast and the fungal spores, or just the fungal spores.

7. In claim 8, it is also unclear whether applicant intends for the term "in a mixture with acid" to apply to *Aureobasidium pullulans* and *Metschnikowia pulcherrima*, or just *Metschnikowia pulcherrima*.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 3, 6, 14, 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by JP06256125 (see English abstract, Derwent Acc. No. 1994-329870). Claim 1 recites a method for producing plant protection or plant-strengthening agents for controlling bacterial and/or fungal plant diseases, in particular fire blight, characterized in that fungal structures which are capable of multiplication are added to an acidic environment for the treatment of plants. Claim 3 recites the method as claimed in claim 1, characterized in that the fungal structures added are yeast cells and/or fungal spores which are capable of multiplication. Claim 6 recites the method as claimed in claim 1, including adding citric acid as acidifier. Claim 14 recites a plant protection or plant-strengthening agent for controlling bacterial and/or fungal plant

Art Unit: 1651

diseases, in particular fire blight, characterized in that the product comprises an acidic environment and fungal structures that are capable of multiplication. Claim 16 recites a method of plant protection or plant-strengthening for controlling bacterial and/or fungal plant diseases, including fire blight, comprise, applying a product in an acidic environment, fungal structures which are capable of multiplication. Claim 18 recites the method of claim 16 including using organic or inorganic acidifiers.

10. JP06256125 teaches the preparation of a white root rot eliminating composition comprising fungi of the genus *Trichoderma* and dilute acids such as citric acid.

JP06256125 teaches a method of treating white root rot comprising administering the composition to plant. The composition of JP06256125 comprises dried fungal material that, absent evidence to the contrary, would be capable of multiplication under appropriate conditions. Because it contains dilute acids, the composition of JP06256125 would be acidic. See English abstract.

11. Therefore, JP06256125 anticipates all of the limitations of the cited claims.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1651

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. Claims 1-6, 10-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP06256125 (see English abstract, Derwent Acc. No. 1994-329870) in view of Seibold et al. (see abstracts of presentations given at Arbeitskreis Phytobakteriologie Conference, Sept. 11-12, 2003, English machine translation). Claim 1 recites a method for producing plant protection or plant-strengthening agents for controlling bacterial and/or fungal plant diseases, in particular fire blight, characterized in that fungal structures which are capable of multiplication are added to an acidic environment for the treatment of plants. Claim 2 recites the method as claimed in claim 1, characterized in that the acidic environment is kept within a pH range of from 3 to 6, preferably pH 3.6 to 4.0. Claim 3 recites the method as claimed in claim 1, characterized in that the fungal structures added are yeast cells and/or fungal spores which are capable of multiplication. Claim 4 recites the method as claimed in claim 1, including the step of adding blastospores of the species *Aureobasidium pullulans*. The method as claimed claim 3, including adding yeast cells of the species *Metschnikowia pulcherrima*. Claim 6 recites the method as claimed in claim 1, including adding citric acid as acidifier. Claim 10 recites the method as claimed in claim 1, including adding

Art Unit: 1651

spores, conidia and budding yeast cells of filamentous fungi and yeast as fungal structures which are capable of multiplication. Claim 11 recites the method as claimed in claim 1, including controlling fire blight by spraying flowers of plants with a mixture of fungal structures which are capable of multiplication and acids, wherein the spray mixture has a pH range of from 3 to 6. Claim 12 recites the method as claimed in claim 1, including controlling fire blight by spraying flowers of plants with blastospores of the species *Aureobasidium pullulans* and/or yeast cells of the species *Metschnikowia pulcherrima* in a mixture with acid, wherein the mixture has a pH range of from 3 to 6. Claim 13 recites the method as claimed in claim 1, including controlling fire blight by spraying flowers of plants with blastospores of the species *Aureobasidium pullulans* and/or yeast cells of the species *Metschnikowia pulcherrima* in a mixture with organic acids whose pH is in the range of from 3 to 6. Claim 14 recites a plant protection or plant-strengthening agent for controlling bacterial and/or fungal plant diseases, in particular fire blight, characterized in that the product comprises an acidic environment and fungal structures that are capable of multiplication. Claim 16 recites a method of plant protection or plant-strengthening for controlling bacterial and/or fungal plant diseases, including fire blight, comprise, applying a product in an acidic environment, fungal structures which are capable of multiplication. Claim 17 recites the method of claim 16, including using blastospores of the species *Aureobasidium pullulans* and/or yeast cells of the species *Metschnikowia pulcherrima* as fungal structures which are capable of multiplication. Claim 18 recites the method of claim 16 including using

organic or inorganic acidifiers. Claim 19 recites the method of claim 16, wherein the acidic environment is an acidic environment within a pH range of from 3 to 6.

15. JP06256125 teaches the preparation of a white root rot eliminating composition comprising fungi of the genus *Trichoderma* and dilute acids such as citric acid.

JP06256125 teaches a method of treating white root rot comprising administering the composition to plant. The composition of JP06256125 comprises dried fungal material that, absent evidence to the contrary, would contain spores and would be capable of multiplication under appropriate conditions. Because it contains dilute acids, the composition of JP06256125 would be acidic. The composition of JP06256125 comprises an organic manure that can easily be made into a liquid, such as animal protein. See English abstract.

16. Siebold teaches that the fungi *Metschnikowia pulcherrima* and *Aureobasidium pullulans* inhibit the growth of fire blight (*Erwinia amylovora*). See translated abstract (p. 13).

17. At the time of the invention, a method and composition for treating plants to protect them from fungal disease similar to the claimed invention was known, as taught by JP06256125. It was further known that *Metschnikowia pulcherrima* and *Aureobasidium pullulans* could be used to inhibit the growth of fire blight, as taught by Siebold. One of ordinary skill in the art would have been motivated to combine these teachings because JP06256125 is directed to a composition comprising a fungus for administration to a plant for the treatment of a disease caused by a microorganism and Siebold teaches fungi which would be useful for the treatment of a disease caused by a

Art Unit: 1651

microorganism. Both teachings are directed to antimicrobial components that may be used in compositions for the treatment of a plant. Combining equivalents that are known to be useful for the same purpose constitutes *prima facie* obviousness. See MPEP 2144.06. The use of the claimed pH range, the use of the spores, conidia and budding yeast cells of the fungi, and the application of the composition as a spray would all have been matters of routine experimentation to one of ordinary skill in the art. One of ordinary skill in the art would have had a reasonable expectation of success in combining the teachings discussed above to arrive at the claimed invention because the use of fungi as antagonists to prevent microbial infection of plants was known in the art, as taught by Siebold (abstract, p. 13), and fungi were known at the time of the invention to be suitable components in compositions for the treatment of plants, as taught by JP06256125. It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings discussed above to arrive at the claimed invention.

18. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP06256125 (see English abstract, Derwent Acc. No. 1994-329870) in view of Seibold et al. (see abstracts of presentations given at Arbeitskreis Phytobakteriologie Conference, Sept. 11-12, 2003, English machine translation) as applied to claims 1-6, 10-14 and 16-19 above, and further in view of Jabar et al. (US 2002/0166147). Claim 1 recites a method for producing plant protection or plant-strengthening agents for controlling bacterial and/or fungal plant diseases, in particular fire blight, characterized

Art Unit: 1651

in that fungal structures which are capable of multiplication are added to an acidic environment for the treatment of plants. Claim 2 recites the method as claimed in claim 1, characterized in that the acidic environment is kept within a pH range of from 3 to 6, preferably pH 3.6 to 4.0. Claim 3 recites the method as claimed in claim 1, characterized in that the fungal structures added are yeast cells and/or fungal spores which are capable of multiplication. Claim 4 recites the method as claimed in claim 1, including the step of adding blastospores of the species *Aureobasidium pullulans*. The method as claimed claim 3, including adding yeast cells of the species *Metschnikowia pulcherrima*. Claim 6 recites the method as claimed in claim 1, including adding citric acid as acidifier. Claim 7 recites the method as claimed in claim 1, including adding whey powder. Claim 8 recites the method as claimed in claim 1, including adding (1) blastospores or yeast cells (2) citric acid and (3) whey powder. Claim 9 recites the method as claimed in claim 1, including adding disodium hydrogen phosphate or sodium hydrogen carbonate. Claim 10 recites the method as claimed in claim 1, including adding spores, conidia and budding yeast cells of filamentous fungi and yeast as fungal structures which are capable of multiplication. Claim 11 recites the method as claimed in claim 1, including controlling fire blight by spraying flowers of plants with a mixture of fungal structures which are capable of multiplication and acids, wherein the spray mixture has a pH range of from 3 to 6. Claim 12 recites the method as claimed in claim 1, including controlling fire blight by spraying flowers of plants with blastospores of the species *Aureobasidium pullulans* and/or yeast cells of the species *Metschnikowia pulcherrima* in a mixture with acid, wherein the mixture has a pH range of from 3 to 6.

Art Unit: 1651

Claim 13 recites the method as claimed in claim 1, including controlling fire blight by spraying flowers of plants with blastospores of the species *Aureobasidium pullulans* and/or yeast cells of the species *Metschnikowia pulcherrima* in a mixture with organic acids whose pH is in the range of from 3 to 6. Claim 14 recites a plant protection or plant-strengthening agent for controlling bacterial and/or fungal plant diseases, in particular fire blight, characterized in that the product comprises an acidic environment and fungal structures that are capable of multiplication. Claim 15 recites a plant protection or plant-strengthening agent for controlling bacterial and/or fungal plant diseases, in particular fire blight, characterized in that 1 kg of product comprises: approx. 2×10^{11} to 1×10^{13} , in particular 2×10^{12} blastospores of the species *Aureobasidium pullulans*; approx. 2×10^{11} to 1×10^{13} , in particular 3×10^{12} yeast cells of the species *Metschnikowia pulcherrima*; 100 g to 400 g, in particular 300 g of citric acid; 50 g to 250 g, in particular 150 g of disodium hydrogen phosphate; and 100 g to 500 g, in particular 400 g of whey powder. Claim 16 recites a method of plant protection or plant-strengthening for controlling bacterial and/or fungal plant diseases, including fire blight, comprise, applying a product in an acidic environment, fungal structures which are capable of multiplication. Claim 17 recites the method of claim 16, including using blastospores of the species *Aureobasidium pullulans* and/or yeast cells of the species *Metschnikowia pulcherrima* as fungal structures which are capable of multiplication. Claim 18 recites the method of claim 16 including using organic or inorganic acidifiers. Claim 19 recites the method of claim 16, wherein the acidic environment is an acidic environment within a pH range of from 3 to 6. Claim 20 recites the method of claim 16,

Art Unit: 1651

wherein 1-kg of the product of plant protection or plant-strengthening agent has the following composition: approx. 2×10^{11} to 1×10^{13} blastospores of the species *Aureobasidium pullulans*; approx. 2×10^{11} to 1×10^{13} yeast cells of the species *Metschnikowia pulcherrima*; 100 g to 400 g of citric acid; 50 g to 250 g disodium hydrogen phosphate; and 100 g to 500 g of whey powder. Claim 21 recites the method as claimed in claim 20, including using spores, conidia and budding yeast cells of filamentous fungi and yeasts as fungal structures. Claim 22 recites the method as claimed in claim 21, wherein the product a pH range of from 3 to 6.

19. JP06256125 teaches the preparation of a white root rot eliminating composition comprising fungi of the genus *Trichoderma* and dilute acids such as citric acid.

JP06256125 teaches a method of treating white root rot comprising administering the composition to plant. The composition of JP06256125 comprises dried fungal material that, absent evidence to the contrary, would contain spores and would be capable of multiplication under appropriate conditions. Because it contains dilute acids, the composition of JP06256125 would be acidic. The composition of JP06256125 comprises an organic manure that can easily be made into a liquid, such as animal protein. See English abstract.

20. Siebold teaches that the fungi *Metschnikowia pulcherrima* and *Aureobasidium pullulans* inhibit the growth of fire blight (*Erwinia amylovora*). See translated abstract (p. 13).

21. It would have been obvious at the time of the invention to combine the teachings of JP06256125 and Siebold, as discussed above. However, neither JP06256125 nor

Art Unit: 1651

Siebold discuss the addition of whey, phosphate or carbonate to the composition for use in the method of treating plants.

22. Jabar teaches the use of a composition that may comprise whey and phosphate for the treatment of plants in order to increase crop yield (abstract, p. 2, par. 24, p. 3, par. 34). Jabar teaches that the composition for the treatment of plants may be applied as a spray (p. 3, par. 33).

23. At the time of the invention, compositions for and methods of treating plants for the prevention of microbial diseases similar to those of the claimed invention were known, as taught by JP06256125 and Siebold. It was further known that whey and phosphate were useful components of compositions for treating plants, as taught by Jabar. One of ordinary skill in the art would have been motivated to combine these teachings because JP06256125 teaches the use of an organic manure, preferably a material which can easily be made into a liquid, such as animal protein in the composition for the treatment of plants (abstract). Jabar teaches that whey is a suitable source of animal protein (or peptides) for a composition for the treatment of plants (par. 24). One of ordinary skill in the art would therefore have recognized that whey would have been a suitable component to add to the composition for the treatment of plants for the prevention of microbial disease. Further, Jabar teaches that phosphates are useful in compositions for the treatment of plants because they are pH control agents (p. 3, par. 34). The use of a buffer in a composition comprising biological material, such as microorganisms, or a composition with a predetermined pH, would be a matter of routine optimization for one of ordinary skill in the art. The claimed concentrations of

Art Unit: 1651

components could also have been arrived at by one of ordinary skill in the art by routine experimentation. One of ordinary skill in the art would have a reasonable expectation of success in combining the components discussed above because all of the components were known to be suitable in a composition for the treatment of plants. It would therefore have been obvious to one of ordinary skill in the art to combine the teachings discussed above to arrive at the claimed invention.

24. Thus, the claimed invention as a whole was *prima facie* obvious over the combined teachings of the prior art.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheridan R. MacAuley whose telephone number is (571) 270-3056. The examiner can normally be reached on Mon-Thurs, 7:30AM-5:00PM EST, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SRM

/Ruth A Davis/

Primary Examiner, AU 1651